

**WHAT IS CLAIMED IS:**

1. A transmission line tap circuit comprising:  
at least two input terminals configured for coupling to a transmission line;  
circuitry configured to provide an impedance load to the transmission line for tapping the  
5 transmission line and receiving a transmission signal propagating there through;  
circuitry configured to amplify the received transmission signal;  
circuitry configured to provide an impedance match to an impedance load of at least one  
Line Interface Unit (LIU); and  
at least two output terminals configured for coupling to the at least one LIU.
- 10 2. The circuit according to Claim 1, wherein the circuitry configured to provide the  
impedance load to the transmission line, the circuitry configured to amplify the received  
transmission signal, and the circuitry configured to provide the impedance match to the  
impedance load of the at least one LIU are provided within a single stage.
- 15 3. The circuit according to Claim 1, wherein the circuitry configured to provide the  
impedance load to the transmission line includes at least two resistors where a first of the at least  
two resistors is connected to a first of the at least two input terminals and a second of the at least  
two resistors is connected to a second of the at least two input terminals.

4. The circuit according to Claim 1, further comprising circuitry configured to block direct current present in the received transmission signal.

5. The circuit according to Claim 4, wherein the circuitry configured to block direct current includes at least a first capacitor connected to a first of the at least two input terminals and a second capacitor connected to a second of the at least two input terminals.

6. The circuit according to Claim 1, further comprising circuitry configured to provide a dissipation load for the received transmission signal.

7. The circuit according to Claim 6, wherein the circuitry configured to provide a dissipation load for the received transmission signal includes at least two resistors connected in series and coupled to the at least two input terminals.

8. The circuit according to Claim 1, further comprising circuitry configured to suppress noise in the received transmission signal and to shape the received transmission signal.

9. The circuit according to Claim 8, wherein the circuitry configured to suppress noise in the received transmission signal and to shape the received transmission signal includes at least two capacitors connected in series and coupled to the at least two input terminals.

10. The circuit according to Claim 1, wherein the circuitry configured to amplify the received transmission signal includes circuitry configured to wave shape the received transmission signal, at least two amplifiers each having respective feedback resistors, and at least two capacitors in parallel to a respective one of the feedback resistors.

5 11. The circuit according to Claim 1, further comprising circuitry configured to provide a dissipation load to the circuitry configured to amplify the received transmission signal.

12. The circuit according to Claim 11, wherein the circuitry configured to provide a dissipation load is in parallel to the circuitry configured to amplify the received transmission signal and includes at least two resistors connected in series.

10 13. The circuit according to Claim 1, further comprising circuitry configured to block direct current from the circuitry configured to amplify the received transmission signal.

14. The circuit according to Claim 13, wherein the circuitry configured to block direct current includes at least two capacitors connected in series and coupled to the at least two output terminals.

15 15. The circuit according to Claim 1, wherein the transmission line is a T1

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transmission line.

16. The circuit according to Claim 1, wherein the transmission line is a E1 transmission line.

17. The circuit according to Claim 1, further comprising gain adjustment circuitry configured to adjust the gain of the circuit.

18. A method for interfacing a transmission line with at least one Line Interface Unit (LIU), the method comprising the steps of:

providing an impedance load to the transmission line for tapping the transmission line and receiving a transmission signal propagating there through;

amplifying the received transmission signal;

providing an impedance match to an impedance load of the at least one LIU; and

providing the amplified signal to the at least one LIU.

19. The method according to Claim 18, further comprising the steps of:

blocking direct current present in the received transmission signal;

providing a dissipation load for the received transmission signal; and

suppressing noise in the received transmission signal.

20. A transmission line tap circuit comprising:  
means for providing an impedance load to a transmission line for tapping the  
transmission line and receiving a transmission signal propagating there through;  
means for amplifying the received transmission signal; and  
5 means for providing an impedance match to an impedance load of at least one Line  
Interface Unit (LIU).

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